Original Research Article

Knowledge, Attitude and Practices on Prevention of Diabetes Mellitus among Hospital Employees at Pondicherry Institute of Medical Sciences Puducherry

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ABSTRACT

Diabetes Mellitus is a chronic condition where there is a disturbance in energy balance arising from varied etiology and resulting in physiological dysfunction. It is a chronic non communicable disease that has long term effects on the quality of each individual life. Objectives of the study were to assess the level of knowledge and Attitude on Prevention of Diabetes Mellitus among hospital employees, to discuss the practices followed on prevention of diabetes mellitus among hospital employees and to correlate the level of knowledge and attitude on prevention of diabetes mellitus among hospital employees. The design adopted for the study was non experimental descriptive design. The study was conducted in the all OPDS and in all General Medical Surgical wards. The data was collected by using Semi structured interview guide, from 50 hospital employees; they were selected by using non probability convenience sampling technique. The finding of the study shows with regard to level of knowledge, 2% of them had adequate knowledge, 72% of them had moderately adequate knowledge and 26% of them had inadequate knowledge regarding prevention of diabetes mellitus. With regard to level of attitude, 48% of them had favorable attitude, 46% had moderately favorable attitude and 6% of them had unfavorable attitude on prevention of diabetes mellitus. It shows weak correlation between the knowledge and attitude, which is statically significant. There is no statistically significant association between the levels of knowledge with the demographic variables. The study findings revealed that majority of hospital employees had moderately adequate knowledge and had moderately favorable attitude on prevention of Diabetes Mellitus. Therefore the study concludes that there is a need to create awareness on prevention of Diabetes Mellitus for hospital employees.

Key Words: Diabetes Mellitus, Hospital Employees, Knowledge, Attitude, Prevention

INTRODUCTION

Diabetes Mellitus is a chronic condition where there is a disturbance in energy balance arising from varied etiology and resulting in physiological dysfunction.

There are different types of Diabetes Mellitus such as Type 1 Diabetes Mellitus, Gestational & Juvenile Diabetes Mellitus and type II Diabetes Mellitus. But Type II Diabetes Mellitus is the most prevalent form

of the disease. 90-95% of the cases of Diabetes Mellitus are prevalent in the Type 2 form. Diabetes Mellitus has reached epidemic proportions both in industrialized and non-industrialized countries and has become a significant health problem. [1] World Health Organization has predicted that within the next two decades, the world wide incidence rate of diabetes will reach 300 million, an increase of approximately 120 percent. Type 2 Diabetes Mellitus affects more than 171 million cases in the world, and Type 2 Diabetes Mellitus accounts for more than 90% to 95% of all cases. 94 to 98% of Indians have type II form of the disease. [2] The 'Explosion' of Diabetes Mellitus in India-The WHO Report states the prevalence of Diabetes Mellitus between 1995 and 2025 will be in China 68% and India 59%.While there will be a 42% increase, from 51 million to 72 million in the developed countries, there will be a 17% increase, from 84 million to 228 million in the developing countries. India already tops the world in the number of cases of diabetes today. To compound this growing problem, it has been speculated that in the future, the majority of people with diabetes in these countries will be in the younger productive age range of 45-64 years, while in the developed countries, the majority of people with diabetes will be aged greater or equal to 65 years. [1, 2] Type 2 Diabetes Mellitus is increasing in both urban and rural areas and most of Indian lives in rural areas with little access to state of the art health care. India's young generation, not aware of their increased susceptibility to the disease, is adopting a diabetogenic lifestyle of physical inactivity and poor diet. [3] A disproportionately larger section of the population suffers from Type 2 Diabetes Mellitus and many of its non-genetic risk factors are modifiable and are subject to environmental manipulation. [4] Diabetes mellitus is related to a multisystem disease due to abnormal production of insulin; impaired insulin utilization or both. It is the leading cause of death and disability in the worldwide. [5] By the year 2030 over

100 million people in India are likely to suffer from diabetes. The aim of the ongoing national Indian Council of Medical Research–India Diabetes study is to estimate the national prevalence of diabetes and pre diabetes in India by estimating the prevalence by state. [4, 5] The Indian council of medical research studies reported respectively the prevalence of diabetes among the rural population from 0.4% in Himachal Pradesh, 1.3% Kerala, 1.5% Delhi and 3.9% in Gujarat. [6, 7]

Objectives

- To assess the level of knowledge and attitude on prevention of Diabetes Mellitus among hospital employees.
- To discuss the practices followed on prevention of diabetes mellitus among hospital employees.

MATERIALS AND METHODS

Quantitative, Non-experimental descriptive research design was used. The participants were the class IV- hospital employees at a selected tertiary care teaching hospital at Puducherry. Sample size was 50 participants. The samples were selected based on the following inclusion and exclusion criteria

Inclusion Criteria
- Both male and female hospital employees
- Age group of 20 to 60 years
- Able to understand and speak Tamil.

Exclusion Criteria
- Those who had training course on Diabetes Mellitus.
- Those who have Diabetes Mellitus.

In this study the sample were selected by using convenience sampling technique. Semi Structured interview guide was used to assess the knowledge, attitude and practices on prevention of Diabetes Mellitus. The tool consists of two parts. Part I - Semi Structured interview guide consist of socio demographic variables. Part II - Semi structured interview questionnaire, 10 multiple choice questions related to knowledge, and 20 dichotomous response

questions related to attitude and practice on prevention of diabetes mellitus. Administrative permission and ethical clearance with regard to the study was obtained from the Institutional Review Board (IRB No. 1602 dated 03.05.2016) at College of Nursing, Pondicherry Institute of Medical Sciences, Puducherry. Procedure was explained and written consent was obtained from the hospital employees. The study was conducted in the month of September 2016. The data obtained was compiled for analysis and interpretation.

RESULTS
Section A: Distribution of hospital employees according to the demographic variables.

Table 1: Frequency and Percentage distribution of hospital employees according to age gender and religion and educational level   n=50

S.No	Study variables	Frequency (f)	Percentage (%)
1	**Age in years**		
a	20 – 30	5	10
b	31 – 40	28	56
c	41 – 50	15	30
d	>50	2	4
2	**Gender**		
a	Male	18	36
b	Female	32	64
3	**Religion**		
a	Hindu	42	84
b	Christian	7	14
c	Muslim	1	2
4	**Educational level**		
a	Illiterate	5	10
b	Primary education	41	82
c	Secondary Education	4	8
5	**Type of family**		
a	Nuclear	28	56
b	Joint	22	44
6	**Marital status**		
a	Married	46	92
b	Single	1	2
c	Others	3	6
7	**Family history**		
a	Diabetes mellitus	21	42
b	Cardiac disease	9	18
c	Others (Eye Disorders, Osteoarthritis)	20(12,8)	40
8	**Personal history**		
a	Alcoholic	7	14
b	Smoking	2	4
c	No bad habits	41	82
9	**Diabetic screening**		
a	Yes	36	72
b	No	14	28

Table 1 shows that more than half (56%) of the hospital employees, belongs to the age group of 31-40 years. With regard to gender 64% of them were females. With regard to religion majority 84% of them were Hindu. With regard to educational qualification 82% of them completed primary education, 56% of them were living in the nuclear family. With regard to marital history 92% were married, and 42% had family history of Diabetes Mellitus.

Section B: Distribution of hospital employees according to the level of knowledge, attitude and practices on prevention of diabetes mellitus.
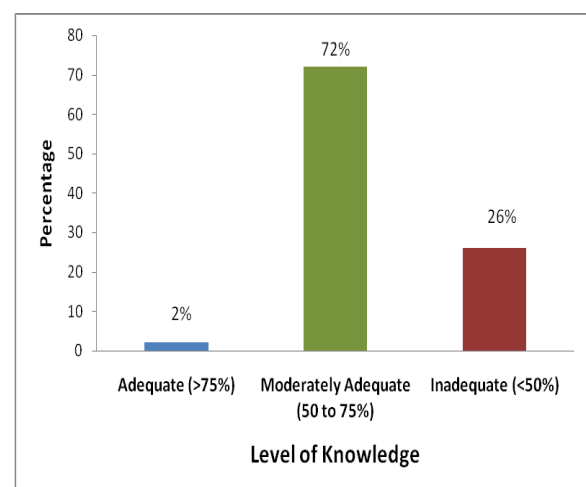

Fig 1: Level of knowledge on prevention of Diabetes Mellitus among hospital employees.

Figure 1 Shows that 26 % had inadequate knowledge on prevention of diabetes mellitus, 72% of the hospital employees had moderately adequate knowledge and 2 % of them had adequate knowledge on prevention of Diabetes Mellitus.
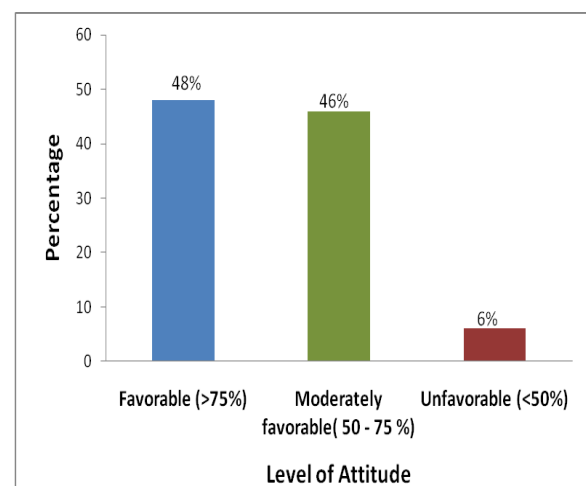

Fig.2 . Level of attitude on prevention of Diabetes Mellitus among hospital employees.

Figure 2 Shows that 48% had favorable attitude, 46% had moderately favorable attitude and 6 % had unfavorable attitude on prevention of Diabetes Mellitus.

The responses given by the hospital employees for favorable attitude with regard to diet are taking more sugar, fat, and overweight can cause diabetes mellitus with regard to exercise, regular walking and yoga can prevent Diabetes Mellitus. The responses given by the hospital employees for un-favorable attitude with regard to diet are increased body weight can cause Hypertension & not diabetes mellitus, exercise will not help to prevent Diabetes Mellitus.

Table 2: Distribution of hospital employees according to the practices on prevention of diabetes mellitus   n = 50

S.NO	ITEM	Yes		No	
		(f)	(%)	(f)	(%)
1	Diet				
	Fasting	30	60	20	40
	Home remedies	43	86	07	14
	Fruits	46	92	04	08
	Coffee / tea	50	100	-	-
	Green leaves	45	90	5	10
	Rice/ rice items	33	66	17	34
2	Exercise and sleep				
	Habit of doing Exercise	28	56	22	44
	Adequate Sleep	49	98	1	2
3	Health checkup	31	62	19	38

Table 2 Shows that. 60% of them were following fasting practice. 86% of them were practicing home remedies. And 100% of them were taking coffee, 90% of them were taking green leafy, 40% of them were going for walking, house hold activities and doing farm work in their leisure time and 60% of them liked to watch TV programs.56% of them were doing regular exercise like going for walking and gym, 44% of them were not doing any exercise and physical activities. 62% of them were going for health checkup and 38% of them were not going for health checkup.

The reasons identified for healthy practices with regard to diet, among hospital employees were, taking fruits, green leafs in their meals and follow home remedies like fenugreek and Indian doab juice. The reasons identified for un-healthy practices with regard to diet, among hospital employees were not taking fruits and not following any home remedies for preventing diabetes mellitus.

Section C: Correlation between the knowledge and attitude on prevention of diabetes mellitus among hospital employees.

Table 3: Correlation between the level knowledge and attitude on prevention of diabetes mellitus   n =50

Study variables	Mean	Standard Deviation	r value	p value
Level of knowledge	5.5	1.3	0.350	0.013*
level of attitude	6.4	1.6		

* statistically significant at p < 0.05 level

Table 3 shows that the correlation between the knowledge and attitude. As both are not normally distributed spearman's rank correlation method was used. It shows weak correlation between the knowledge and attitude, which is statically significant.

Section D: Association between the levels of knowledge and attitude on diabetes mellitus with demographic variables

Table 4: Association between the levels of Knowledge with Demographic Variables   n= 50

S.No	Study variables	Level of knowledge			Fisher's exact test
		Inadequate	Moderately adequate	Inadequate	
1	**Age in years**				
a	20 – 30	1	4	0	
b	31 – 40	8	20	0	
c	41 – 50	4	10	1	0.784
d	>51	0	2	0	
2	**Gender**				
a	Male	5	13	0	
b	Female	8	23	1	1.000
3	**Religion**				
a	Hindu	11	30	1	
b	Christian	1	6	0	0.410
c	Muslim	1	0	0	

	Table 4 to be continued…				
4	**Educational level**				
a	Illiterate	3	2	0	
b	Primary education	10	30	1	0.275
c	Secondary Education	0	4	0	
5	**Type of family**				
a	Nuclear	7	21	0	
b	Joint	6	15	1	0.734
6	**Marital status**				
a	Married	12	33	1	
b	Single	0	1	0	1.000
c	Others	1	2	0	
7	**Family history**				
a	Diabetes mellitus	3	17	1	
b	Cardiac disease	2	7	0	0.227
c	Others (Eye Disorders, Osteoarthritis)	8	12	0	
8	**Personal history**				
a	Alcoholic	1	6	0	
b	Smoking	1	1	0	0.615
c	No bad habits	11	29	1	
9	**Diabetic screening**				
a	Yes	9	27	0	
b	No	4	9	1	0.312

Table 5 Shows that there was no association between the level of attitude on prevention of diabetes mellitus with selected demographic variables such as age, gender, marital status, religion, educational level, type of family, personal history, family history and diabetic screening.

DISCUSSION

In the present study with regard to the level of knowledge on prevention of Diabetes Mellitus among hospital employees only 2% of them had adequate knowledge, 72% of them had moderately adequate and 26% of them had inadequate knowledge. A descriptive study was conducted on 100 type 2 diabetes patients to assess the knowledge and attitude on self-care activities by using interview schedule & Likert's scale. The results showed that 48% of the patients had inadequate knowledge, 35% of the patients had moderately adequate knowledge and 17% of the patients had adequate knowledge on self-care activities. [8] So most of the patients were having inadequate knowledge and attitude about diabetes mellitus.

In the present study the level of attitude on prevention of diabetes mellitus among hospital employees were 48% of them had favorable attitude, 46% had moderately favorable attitude and 6% of them had unfavorable attitude on prevention

of diabetes mellitus. A cross-sectional study done to establish the level of knowledge of diabetes among community members in rural and urban at Kenya. A face-to-face interview was done for selected respondents using a structured questionnaire for data collection. Among 1982 respondents, 1151 (58.1%) female and 831 (41.9%) males aged between 13 and 65 years. Only 971(49%) of the respondents had a positive attitude towards diabetes. [9] A descriptive study was conducted to assess the knowledge and attitude toward DM and diabetic retinopathy of the general population in a suburban town of South India. Door-to-door population survey was conducted in suburban town of South India in May 2013. In this study, Good knowledge and positive attitude were observed in 3457 (55.6%) and 3280 (52.8%) people. Among 1538 (25.4%) people known to have DM, 828 (53.8%) had a positive attitude. Education level showed a significant association with good KAP ($P< 0.001$ each) in general population and those with DM. [10] So, it is suggested that proper health education can improve the patient's knowledge and attitude on self-care activities.

In the present study about 60% of them were following fasting practice. 86% of them were practicing home remedies. And 100% of them were taking coffee, 90% of them were taking green leafy, 40% of

them were going for walking, house hold activities and doing farm work in their leisure time and 60% of them liked to watch TV programs.56% of them were doing regular exercise like going for walking and gym and 44% of them were not doing any exercise and physical activities. 62% of them were going for health checkup and 38% of them were not going for health checkup. Qualitative survey was conducted on Knowledge, attitudes, and behavior relating to diabetes and its main risk factors among women residents in Cameroon. Many participants believed diabetes was caused by excessive sugar consumption rather than excessive energy intake, obesity, or physical inactivity. Several constraints to the adoption of healthy behaviors were identified. For diet, these included lack of knowledge of the composition of a healthy diet. Barriers to undertaking more physical activity included lack of facilities and inadequate time available. [11] The results indicate the need for health education about diabetes and its main risk factors. Health education should be informed by lay perspectives to maximize the appropriateness of the messages and their effect on knowledge, attitudes and behavior.

The knowledge and attitude scores were not normally distributed so Spearman's rank correlation method was used and it shows weak correlation between the knowledge and attitude. It is statically significant and the r value is 0.350 and p value is 0.013. A cross sectional study describes the knowledge, attitudes and practices regarding lifestyle modifications among 217 type 2 diabetes mellitus patients attending Mamelodi Hospital, Pretoria, Republic of South Africa. The Knowledge, attitude and practice of participants were assessed. Significant positive correlation (r= 0.170, p=0.012) was found between the global knowledge level and attitude level alone. [12] So, the level of knowledge has some effect on the level of attitude.

A study conducted among diabetic patients in Qatar found that level of educational attainment, gender or years since diabetes diagnosis did not affect knowledge and attitude regarding diabetes. [10] In the present study Fisher's exact test done for association between the level of attitude and demographic variables such as age, gender, religion, educational level, marital status, and personal history, type of family and family health history and diabetes screening. There is no significant association between the level of attitude and selected demographic variables.

CONCLUSION

The present study assessed the knowledge, attitude and practices on prevention of diabetes mellitus among hospital employees working at selected hospital at Puducherry. They were assessed by using semi structured interviewed guide. The current study revealed that majority of the hospital employees had moderately adequate knowledge and therefore the study concluded that there is a need to provide health education and create awareness about diabetes and its prevention among the hospital employees.

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